IN THE CLAIMS:

Please cancel claims 6 and 7 without prejudice or disclaimer, and amend claims 1, 3-4, 11-12 and 14 as follows:

1. (Currently Amended) A method of analysis of DNA sequence, comprising the steps of:

treating a substrate solution containing a nucleic acid substrate for a complementary strand extension reaction by degrading, using pyrophosphatase, pyrophosphoric acid contained in the substrate solution, and/or degrading, using apyrase, adenosine 5'–triphosphate contained in the substrate solution;

removing or inactivating the pyrophosphatase and/or the apyrase in the solution after the pretreating step;

mixing the substrate solution with reaction solution that contains a DNA primer, a target nucleic acid and a reagent for the extension reaction on the DNA primer, after the step of removing or inactivating;

conducting the extension reaction on the DNA primer hybridized to the target nucleic acid, the extension reaction consisting of a plurality of one base extensions, wherein the substrate solution is added to the reaction solution per each of said plurality of one base extensions; and

detecting pyrophosphoric acid generated by the extension reaction after the removing or inactivating step, wherein the substrate solution does not contain the DNA primer, the nucleic target acid and the reagent.

2. (Previously Presented) A method of analysis of DNA sequence according to Claim 1, wherein the pyrophosphatase and/or the apyrase is immobilized on a solid.

3. (Currently Amended) A method of analysis of DNA sequence, comprising steps of:

adding pyrophosphatase and/or apyrase to one or more solutions each containing a different deoxynucleotide, or an analogue of the deoxynucleotide and then thereby degrading pyrophosphoric acid or adenosine 5'–triphosphate, respectively, contained in the one or more solutions;

removing or inactivating the pyrophosphates and/or the apyrase in the one or more solution after the step of degrading after the adding step;

mixing the one or more solutions[[,]] with a reaction solution that contains a DNA primer, a target nucleic acid and a reagent for extension reaction of the DNA primer, after the step of removing or inactivating; and

extending the DNA primer hybridized to the target nucleic acid, by using DNA polymerase and at least one of the one or more solutions as a plurality of one base extensions; and

detecting pyrophosphoric acid generated during an extension reaction by chemiluminescence-reaction after the removing or inactivating step, wherein the one or more solutions does not contain the DNA primer, the target nucleic acid and the reagent.

4. (Currently Amended) A method of analysis of DNA sequence comprising steps of:

adding pyrophosphatase to one or more solutions each containing a different deoxynucleotide, or an analogue of the deoxynucleotide and then thereby degrading pyrophosphoric acid contained in the one or more solutions;

removing or inactivating the pyrophosphates in the one or more solutions after the step of degrading after the adding step;

mixing the one or more solutions[[,]] with a reaction solution that contains a DNA primer, a target nucleic acid and a reagent for an extension reaction of the DNA primer, after the step of removing or inactivating the pyrophosphatase;

extending the DNA primer hybridized to the target nucleic acid, by using DNA polymerase and at least one of the one or more solutions and converting pyrophosphoric acid, generated during the extension reaction, into adenosine 5'–triphosphate in presence of adenosine 5'-phosphosulfate and ATP sulfurylase; and

detecting luminescence caused by chemiluminescence-reaction using the adenosine 5'-triphosphate, a luminescence-enzyme and a luminescence substrate after the removing or inactivating step, wherein the one or more solutions does not contain the DNA primer, the target nucleic acid and the reagent.

5 - 7. (Cancelled)

8. (Previously Presented) A method of analysis of DNA sequence according to Claim 7, wherein the pyrophosphatase and/or the apyrase is immobilized on a solid.

9. (Previously Presented) A method of analysis of DNA sequence according to Claim 4, wherein a base at the 3' terminus of the primer is complementary to one base located next to a single nucleotide polymorphism at one side of a 3' terminus in the target nucleic acid.

10. (Previously Presented) A method of analysis of DNA sequence according to Claim 4, wherein a second or third base from the 3' terminus of the DNA primer is substituted with a base not complementary to one base sequence of the target nucleic acid.

11. (Currently Amended) A method of analysis of DNA sequence, comprising steps of:

a first step of adding pyrophosphatase to each of a first solution containing deoxyadenosine 5'-α-thiotriphosphate, a second solution containing deoxythymidine 5'-triphosphate, a third solution containing deoxyguanosine 5'-triphosphate and a fourth solution containing deoxycytidine 5'-triphosphate, and then thereby degrading pyrophosphoric acid contained in each of the first, second, third and fourth solutions;

a second step of removing or inactivating the pyrophosphatase in each of the first, second, third and fourth solutions after the first step;

a third step of mixing ~~the one or more solutions,~~ at least one of the first, second, third and fourth solutions with a DNA primer, a target nucleic acid and a reagent for extension reaction of the DNA primer after the second step;

a fourth step of extending the DNA primer hybridized to the target nucleic acid, by using DNA polymerase and at least one of [[the]] solutions obtained in said second step, converting pyrophosphoric acid generated during the extension reaction into adenosine 5'-triphosphate in presence of adenosine 5' phosphosulfate and ATP sulfurylase; and

a fifth step of detecting luminescence caused by chemiluminescence-reaction using the adenosine 5' triphosphate, lusiferase and luciferin after the second step, wherein each of the solutions does not contain the DNA primer, the target nucleic acid and the reagent.

12. (Currently Amended) A method of analysis of DNA sequence, comprising steps of:

a first step of adding pyrophosphatase to a first solution containing deoxyadenosine 5'-α-thiotriphosphate, deoxythymidine 5'-triphosphate, deoxyguanosine 5'-triphosphate and deoxycytidine 5'-triphosphate, thereby degrading the pyrophosphoric acid contained in the first solution;

a second step of removing or inactivating the pyrophosphatase in ~~each of~~ the first solutions after the first step;

a third step of mixing the ~~one or more solutions,~~ first solution with a DNA primer, a target nucleic acid and a reagent for an extension reaction of the DNA primer after the second step, and

a fourth step of extending the DNA primer hybridized to the target nucleic acid, by using DNA polymerase and ~~at least one of the solutions~~ a solution obtained in said second step, converting pyrophosphoric acid, generated during the extension reaction, into adenosine 5'-triphosphate in presence of adenosine 5' phosphosulfate and ATP sulfurylase; and

a fifth step of detecting luminescence caused by chemiluminescence-reaction using the adenosine 5' triphosphate, lusiferase and luciferin after the second step, wherein ~~each of the solutions~~ the first solution does not contain the DNA primer, the target nucleic acid and the reagent.

13. (Previously Presented) A method of analysis of DNA sequence according to Claim 12, wherein a second or third base from the 3' terminus of the DNA primer is substituted with a base not complementary to one base sequence of the target nucleic acid.

14. (Previously Presented) A method of analysis of DNA sequence according to Claim 12, wherein the extension reaction is conducted by repeating hybridization of the DNA primer to the target nucleic acid via degrading an extended strand produced in the extension reaction from the 5' terminus of the extended strand, using a 5' → 3' exonuclease reaction.